Requirements Management Executive Overview

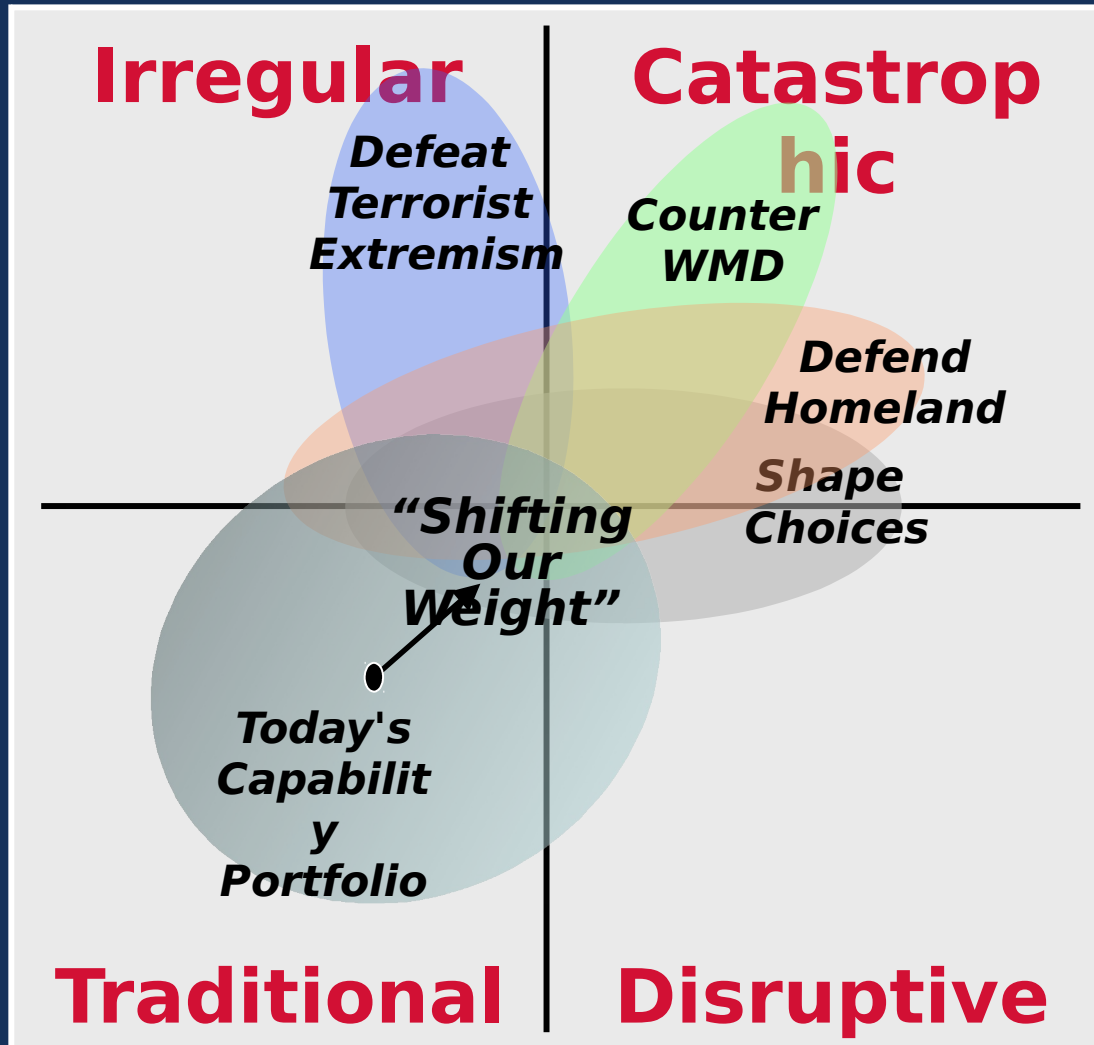## Joint Capabilities Integration and Development System (JCIDS)

Defense Systems Management College
School of Program Managers
Defense Acquisition University

22 June 2009

Developing Requirements

✳ **Developing Capabilities**

✳ **Sequences of Events**

- **Analysis**
- **Initial Documentation**
- **Transitions to Actions that provide Solutions**

✳ **Non-Materiel Solutions**

✳ **JCIDS Interactions with Developing Materiel Solutions**

Strategic Direction

Irregular   Catastrophic

Defeat Terrorist Extremism

Counter WMD

Defend Homeland

Shape Choices

"Shifting Our Weight"

Today's Capability Portfolio

Traditional   Disruptive

Warfare is Not Always Force-on-Force

QDR 2006

- Defeat Terrorist Networks
- Defend the Homeland in Depth
- Shape the Choices of Countries at Strategic Crossroads
- Counter the Acquisition and Use of Weapons of Mass Destruction

3   3

Threat vs Capabilities-Based Planning

Requirements Generation System (RGS) - ~30 years of experience

Partially Interoperable Capabilities

Late Integration

Services Build Systems

Service Experimentation, Assessment & Analysis, Validation, Selection of Solutions

Service Unique Strategic Visions and Requirements

Joint Capabilities Integration and Development System (JCIDS) ~ 6 years old

Strategic Direction

Joint Warfighting Concept Development

Joint Experimentation, Assessment & Analysis, Validation, Selection of Solution

COCOMs, Services' Unique Strategic Visions

Joint Capabilities

Strategic Guidance And Desired Effects

Strategic Guidance (OSD (P))

- National Security Strategy
- National Defense Strategy
- National Military Strategy
- Contingency Planning Guidance
- QDR Report
- Guidance for Development of the Force
- Joint Programming Guidance

Analytic Agenda (OSD

- Defense Planning Scenarios
- Multi-Service Force Deployment
- Operational Availability Studies
- Global Force Management

Joint Concepts (J7)

- CJCSI 3010.02B
- Joint Operating Concepts (JOCs)
- Joint Concept Development & Experimentation Process Guide
- JCDE Campaign Plan
- Joint Concepts
- DPS – Blue Force CONOPS

Force Management ← CBP → **Adaptive Planning**

JCIDS (J8)

- CJCSI/M 3170.01
- JROC Validation and Approval of JCIDS Documents
- Functional Capabilities Boards
- Evaluation of COCOM Needs (lessons learned, joint urgent needs, etc.)

DoD 5000 (OSD

- Concept Decisions
- Defense Acquisition Boards
- Acquisition Decision Memos
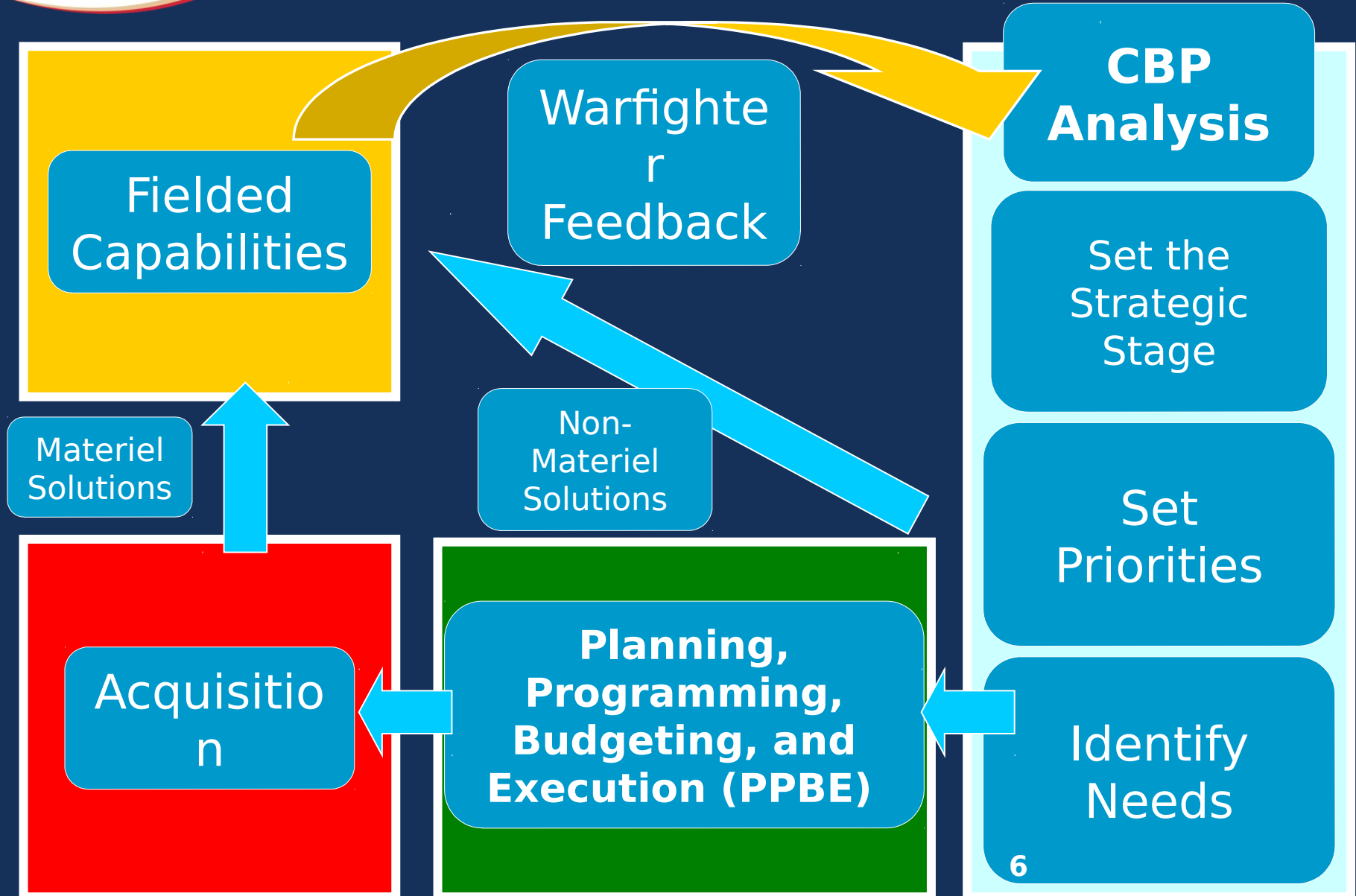- Selected Acquisition Reports/ Defense Acquisition Executive Summaries
- Capability Portfolio Management

PPBE (OSD (C/PA&E))

- Program Objective Memorandum/ Budget Estimate Submission
- Program Review
- Program Decision Memos/ Program Budget Decisions
- President's Budget

Common Lexicon – Joint Capability Areas

Delivered Capability to the Joint Warfighter

Capabilities-Based Planning

CBP Analysis

Warfighter Feedback

Fielded Capabilities

Set the Strategic Stage

Materiel Solutions

Non-Materiel Solutions

Set Priorities

Acquisition

Planning, Programming, Budgeting, and Execution (PPBE)
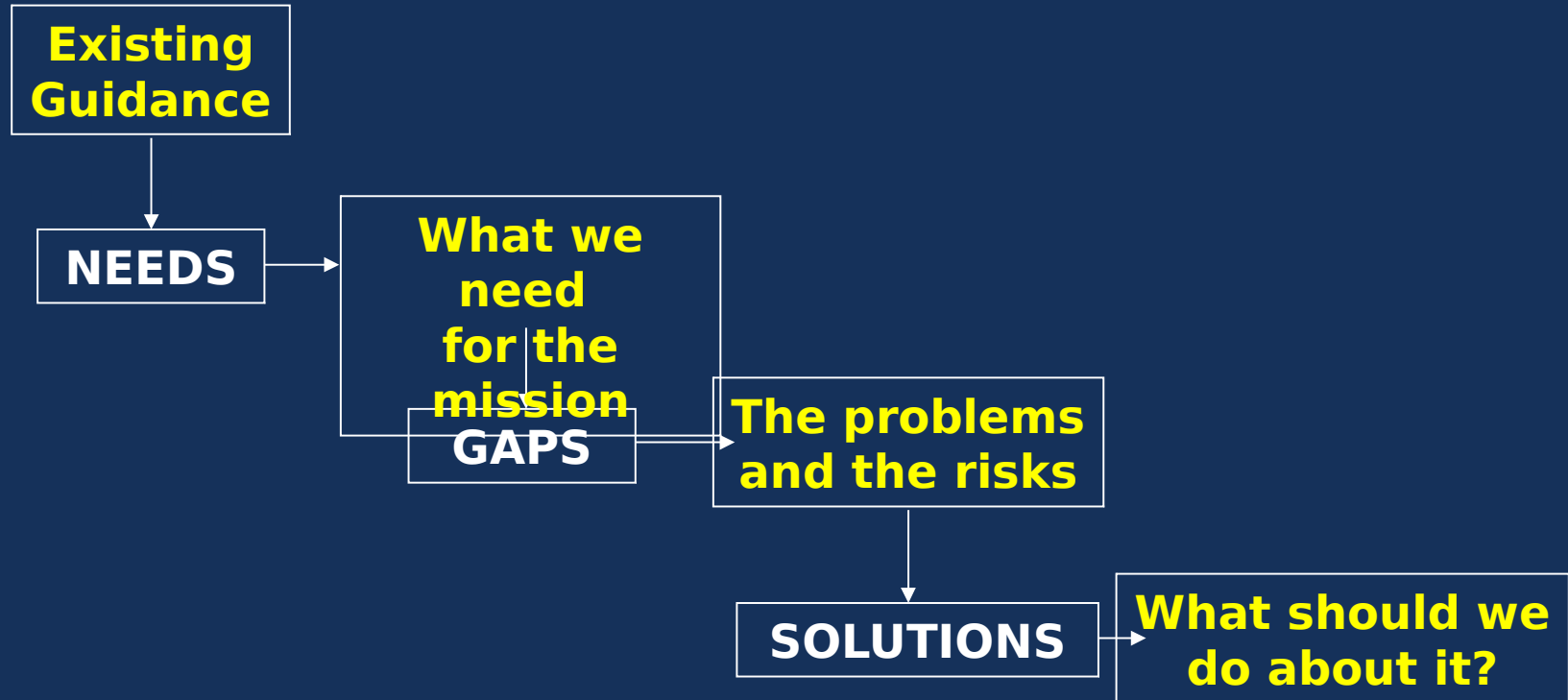
Identify Needs

6

Capabilities-Based Assessment (CBA)

✳ **What is Analysis?**

✳ **How Does Analysis Help Deliver Solutions to the Warfighter?**

✳ **What is a Capabilities Based Assessment (CBA)?**

Analysis

Analysis – An analytical study of military problems undertaken to provide the responsible commanders and staff agencies with a scientific basis for decisions or action to improve military operations

✴ **Analysis is a Structured Study That:**
- **Solves a problem**
- **Examines a range of alternatives**
- **Converts real life into math models or simulations**
- **Processes data and derives meaning from results**
- **Conveys understandable results to the Decision Maker**

Capabilities-Based Assessment

Existing Guidance

NEEDS → **What we need for the mission**

GAPS → **The problems and the risks**

SOLUTIONS → **What should we do about it?**

Tab 2

9

The Acronym

D O T M L P F

D – Doctrine

O – Organization

T – Training

M – Materiel

L – Leadership and education

P – Personnel

F – Facilities

Tab 2

Identifying Potential Solution Approaches

✳ **Transformational Solutions**

✳ **Evolution of Existing Capabilities**

✳ **Information Technology Solutions**

✳ **Information for an Analysis of Alternatives**

✳ **Managers must communicate to avoid disconnects over seams between JCIDS, DAS, and PPBE**

Initial Documentation

✳ **DOTMLPF Change Recommendation (DCR)**
✳ **Initial Capabilities Document (ICD)**

The Joint DOTMLPF Change Recommendation (DCR)

* **Results of Joint Experimentation or Other Assessments**

* **Results of a Capabilities Based Assessment (CBA)**

* **Request Additional Commercial or Non-Developmental Items Previously Produced or Deployed**

* **Introduce Solutions Available From Other DOD, US Agency, or Foreign Sources**

DOTMLPF Analysis

✴ **When DoD Decides to Not Develop New Materiel Systems**

✴ **Non-Materiel Solutions**
  - **Change policy**
  - **Change doctrine**
  - **Reorganize**
  - **Train and educate DOD personnel differently**
  - **Acquire commercial or non-developmental items**
  - **Acquire more quantities of existing items**
  - **Add or reassign personnel**
  - **Move or realign facilities**

✴ **Sometimes Called DOT_LPF**

Documenting Capability Gaps

Requirements developed during analysis go into the Initial Capabilities Document (ICD):

Capabilities-Based Assessment (CBA)	→	Initial Capabilities Document (ICD)	→	Staffing and Validation

- ✴ **ICDs Apply the Capabilities-Based Assessment (CBA) Results**
  - • **Identifies relevant operational performance attributes**
  - • **Documents the recommendation on the need for a materiel solution**
- ✴ **Predecessor Document for the Capability Development Document (CDD)**

15

Tab 2

Operational Performance Attributes

✴ **Attributes Necessary to Design a Proposed System**

✴ **Establish a Performance Baseline**

✴ **Guide Development and Demonstration**

✴ **Guide Developing Key Performance Parameters (KPPs)**
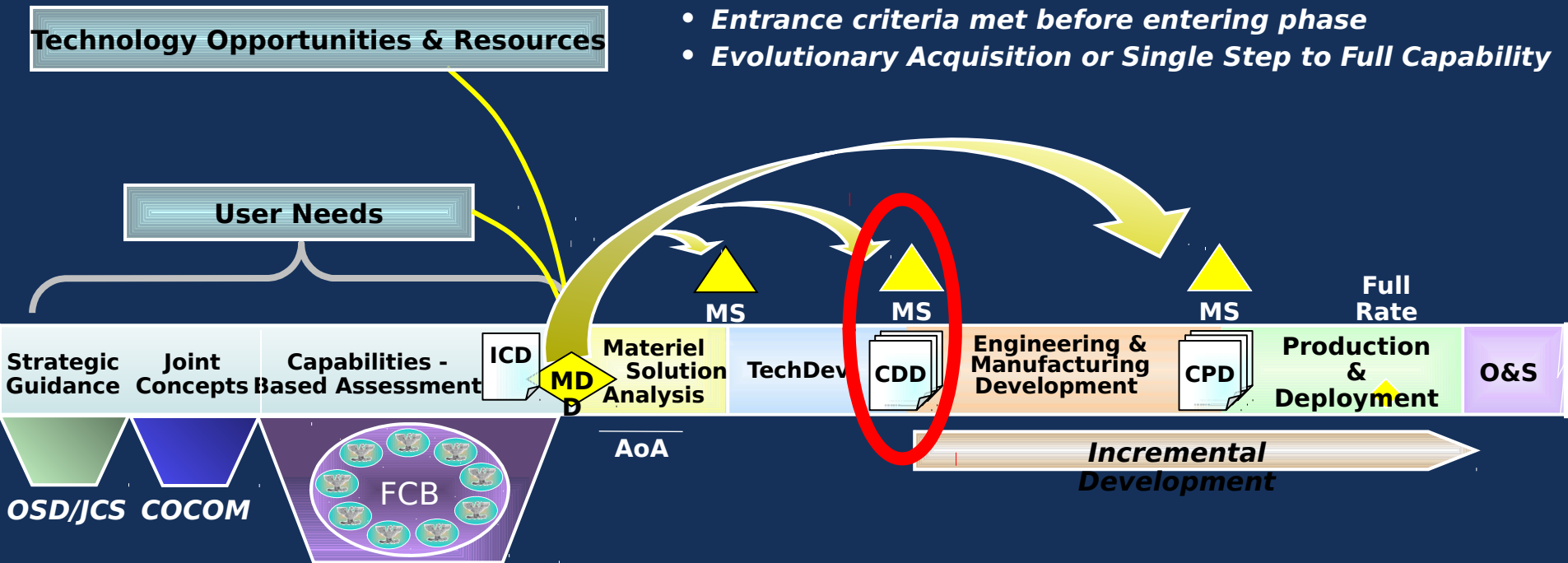
Key Performance Parameters (KPPs)

- ✶ **Attributes or Characteristics of a System**
- ✶ **Critical or Essential**
  - • **To develop an effective military capability**
  - • **To make a significant contribution to the characteristics of the future joint force**
- ✶ **KPPs Must be Testable**
  - • **Enable feedback from T&E**
- ✶ **Validated by the JROC for JROC Interest Documents**

Key System Attributes (KSAs)

✳ **Attributes Most Critical or Essential**

✳ **Not Selected as a KPP**

✳ **An Additional Level of Capability Prioritization Below the KPP**

✳ **Only Senior Leadership can Change a KSA**

- **Sponsor 4-star**
- **Defense Agency Commander**
- **Principal Staff Assistant**

The Defense Acquisition Management System

- *Materiel Development Decision precedes entry into any phase of the acquisition framework*
- *Entrance criteria met before entering phase*
- *Evolutionary Acquisition or Single Step to Full Capability*

Technology Opportunities & Resources

User Needs

| Strategic Guidance | Joint Concepts | Capabilities - Based Assessment | ICD | MDD | Materiel Solution Analysis | TechDev | CDD | Engineering & Manufacturing Development | CPD | Production & Deployment | O&S |

MS MS MS

Full Rate

AoA

Incremental Development

OSD/JCS COCOM FCB

19   **19**

KPPs and Requirements Documents

- ✳ **The Capability Development Document (CDD) and Capability Production Document (CPD) Must Contain Sufficient KPPs**
- ✳ **Capture Minimum:**
  - • **Operational effectiveness**
  - • **Suitability**
  - • **Sustainment**
- ✳ **Failure to Meet a KPP Results in Reevaluation or Reassessment of the Program**

What does the CDD Do?

✴ **Define Performance Requirements to Achieve the Capability**

- **KPPs, KSAs, and additional attributes**
- **Authoritative**
- **Measurable**
- **Testable**

✴ **Capture Necessary Information for Affordable and Supportable Capabilities**

✴ **Describe DOTMLPF and Policy Constraints**

CDD Focus

✶ **Specify the Attributes of a System in Development**

✶ **Provide Operational Capabilities for the Acquisition Strategy and the Acquisition Program Baseline (APB)**

✶ **Insert All CDD Key Performance Parameters (KPPs) and Sustainment Key System Attributes (KSAs) Verbatim into the APB**

What does the CPD Do?

✴ **Support Production and Deployment**

✴ **Authoritative, Testable Capabilities**

✴ **Support Production, Testing, and Deployment**

✴ **Incremental Production and Deployment**

✴ **No New Requirements**

✴ **Operational Performance Attributes**

The Defense Acquisition Management System

- *Materiel Development Decision precedes entry into any phase of the acquisition framework*
- *Entrance criteria met before entering phase*
- *Evolutionary Acquisition or Single Step to Full Capability*

Technology Opportunities & Resources

User Needs

| Strategic Guidance | Joint Concepts | Capabilities - Based Assessment | ICD | MDD | Materiel Solution Analysis | TechDev | CDD | Engineering & Manufacturing Development | CPD | MS | Production & Deployment | O&S |

MS **MS** **MS**

Full Rate

AoA

Incremental Development

FCB

OSD/JCS *COCOM*

Differences Between the CDD and the CPD

CDD	CPD
Focus on Design	Focus on Production
All Increments	A Specific Increment
KPPs to Help Evaluate Alternative Designs	KPPs Refined and Tailored to the Proposed System

JCIDS Summary
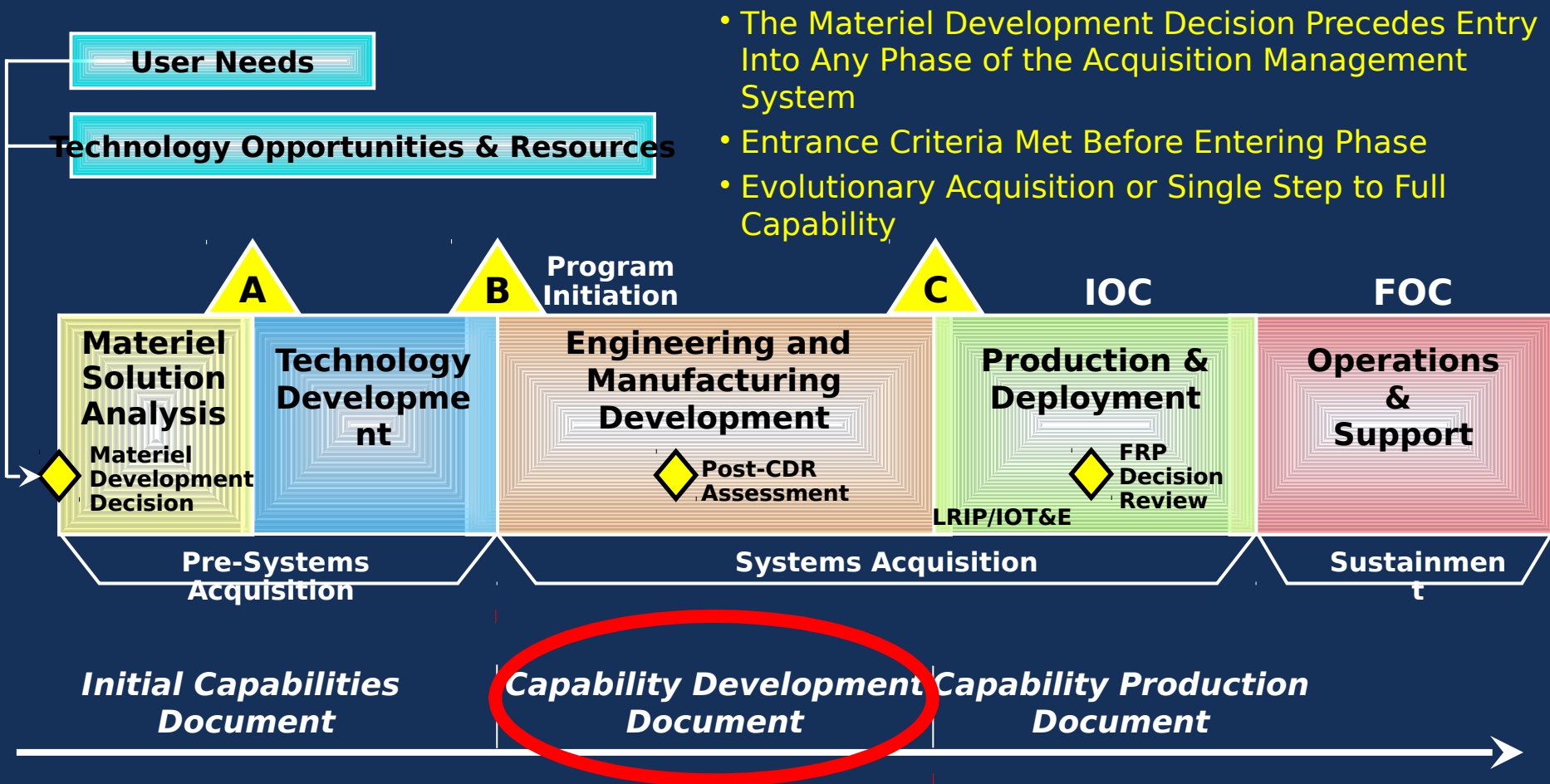
✳ **The Need for Flexible Capabilities**

✳ **Begin With Analysis**

✳ **Analysis Leads to Action**

✳ **Non-Materiel Solutions**

- **The DOTMLPF Change Recommendation (DCR)**

✳ **Materiel Solutions**

- **Initial Capabilities Document (ICD)**
- **Capability Development Document (CDD)**
- **Capability Production Document (CPD)**

Backup Slides

Discussion Questions

✴ **What Analysis is Going to Work Best to Deliver Effective Solutions to Warfighters?**

✴ **How Can We be Sure Non-Materiel Solutions are Going to be Effective?**

✴ **What Subsequent Analysis is Going to Help Deliver Effective Materiel Solutions?**

✴ **What Is Your Experience with Analysis and the Results of Analysis?**
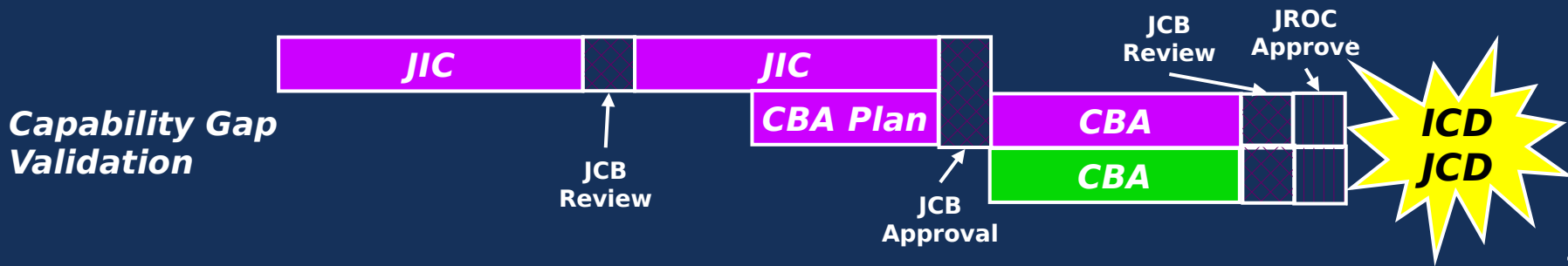
The Defense Acquisition Management System

- The Materiel Development Decision Precedes Entry Into Any Phase of the Acquisition Management System
- Entrance Criteria Met Before Entering Phase
- Evolutionary Acquisition or Single Step to Full Capability

User Needs

Technology Opportunities & Resources

A   **B**   Program Initiation   **C**   **IOC**   **FOC**

Materiel Solution Analysis	Technology Development	Engineering and Manufacturing Development	Production & Deployment	Operations & Support

◆ Materiel Development Decision

◆ Post-CDR Assessment

◆ FRP Decision Review

LRIP/IOT&E

Pre-Systems Acquisition   **Systems Acquisition**   **Sustainment**

Initial Capabilities Document   *Capability Development Document*   *Capability Production Document*
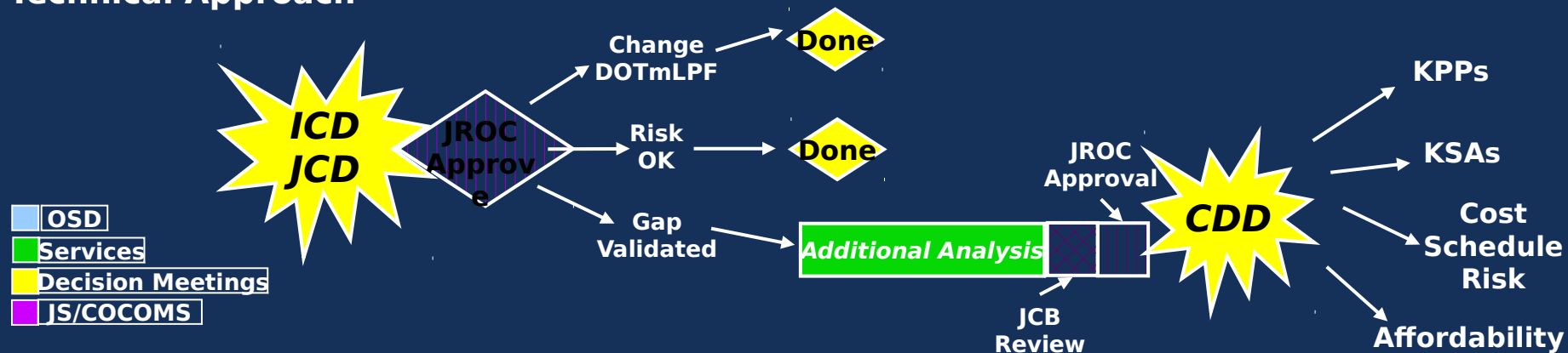
Relationship to JCIDS

CDR: Critical Design Review
FRP: Full Rate Production

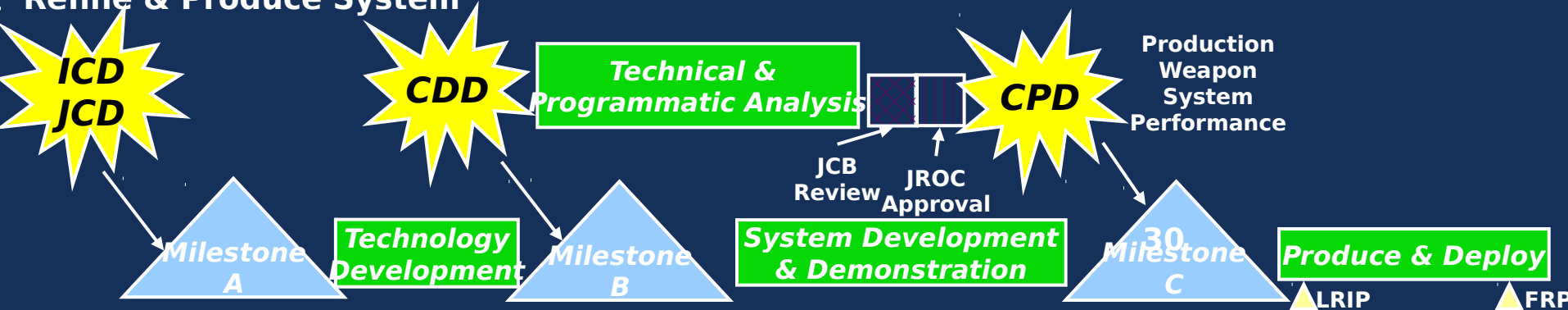IOC: Initial Operational Capability
FOC: Full Operational Capability

29

Capability Based Process and Acquisition

Capability Gap Validation

- JIC
- JIC
- CBA Plan
- JCB Review
- JROC Approve
- CBA
- CBA
- JCB Review
- JCB Approval
- **ICD JCD**

Technical Approach

- **ICD JCD**
- JROC Approve
- Change DOTmLPF → **Done**
- Risk OK → **Done**
- Gap Validated → *Additional Analysis*
- JCB Review
- JROC Approval
- **CDD**
- KPPs
- KSAs
- Cost Schedule Risk
- Affordability

Legend:
- OSD
- Services
- Decision Meetings
- JS/COCOMS

Refine & Produce System

- **ICD JCD**
- **CDD**
- *Technical & Programmatic Analysis*
- JCB Review
- JROC Approval
- **CPD**
- Production Weapon System Performance
- Milestone A
- *Technology Development*
- Milestone B
- *System Development & Demonstration*
- 30 Milestone C
- *Produce & Deploy*
- LRIP
- FRP

JROC DECISION CHAIN

FINAL DECISION AUTHORITY

CJCS — ADVICE TO SECDEF

JROC — RECOMMENDATION APPROVAL/ TOP LEVEL GUIDANCE

JCB — ISSUE DEVELOPMENT

FCB — INITIAL ISSUE REVIEW

FCB WG — ANALYTIC FOUNDATION

JROC: Joint Requirements Oversight Council
JCB: Joint Capabilities Board
FCB: Functional Capabilities Board
FCB WG: Functional Capabilities Board Working Group

JROC MEMBERSHIP

Chair: VCJCS

Council Members:

- Vice Chief of Staff, Army

- Vice Chief of Naval Operations

- Vice Chief of Staff, Air Force

- Assistant Commandant of the Marine Corps

COCOMs have a standing invitation to attend all JROC sessions

- **Perform an initial review of all JCIDS proposals**
  - **Support provided by J6, J8, FCB WGs**
- **The Gatekeeper will determine:**
  - **Joint Potential Designator**
    - **JROC Interest**
    - **JCB Interest**
    - **Joint Integration**
    - **Joint Information**
    - **Independent**
  - **Lead and supporting Functional Capabilities Boards**
- **Formal Staffing begins after Gatekeeper decisions**

Functional Capability Boards

Command & Control	Battlespace Awareness	Logistics	Force Support
Maj Gen Kennedy JFCOM J-8	**Brig Gen Grundhauser** JS J-2	**RDML Prendergast** JS J-4	**Ms Disbrow** JS J-8

Protection	Force Application	Net-Centric	Building Partnerships
Brig Gen Robinson JS J-8	**Brig Gen Robinson** JS J-8	**Brig Gen Basla** JS J-6	**Mr Norwood** JS J-5

FCB Membership: (O-6 level)

Services	ASD NII/ DOD CIO
Combatant Command Reps	D, PA&E
OSD (AT&L)	DIA Rep (Threat)
OSD (I)	Mission Rqmts Board Exec Sec'y
USecAF (Space)	Other DoD Agencies as necessary

Corp Support & Management

Maj Gen Gaskin VDJS

JROC Interest

Staffing → FCB Review → JCB → **JROC**

ACAT I proposals

JCB Interest

Staffing → FCB Review → **JCB**

ACAT II & III proposals requiring a joint review

Joint Integration

Staffing → Certification → **Sponsor**

ACAT II & III proposals requiring certifications only

Joint Information

Staffing → **Sponsor**

ACAT II & III proposals with multi-component interest

Independent

Sponsor

ACAT II & III component unique proposals

Validation Authority

Tripwires

FCB Review → JCB → **JROC**

ACAT I programs with 10% cost growth

Top Cost Drivers

1. Force Structure — 26.9%
2. KPP BA SIGINT — 9.0%
3. Electronic Protection — 6.0%
4. KPP BA Optical — 4.8%
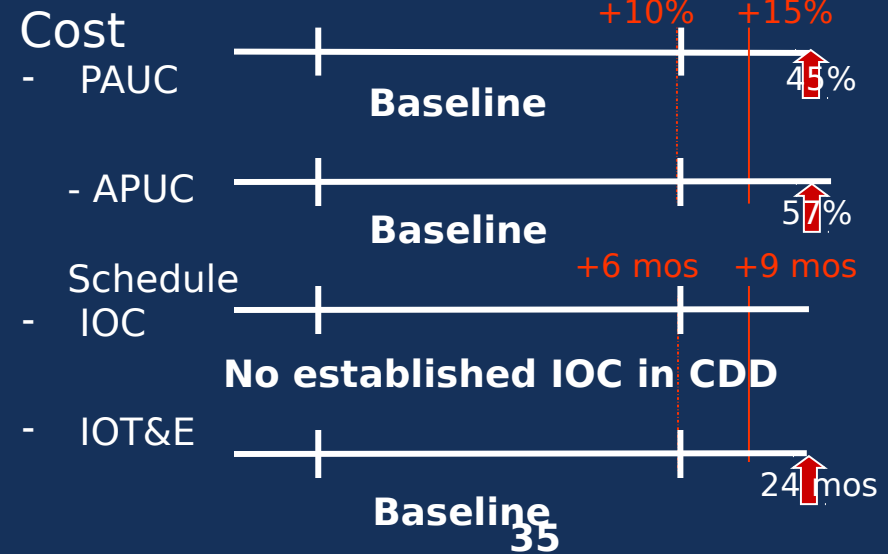5. C^3 — 1.9%

Performance (KPPs & select KSAs)

KPP 1, Endurance
KPP 2, World-wide
KPP 3, Dynamic Crl
KPP 4, Net Ready
KPP 5, BA

N   T   O
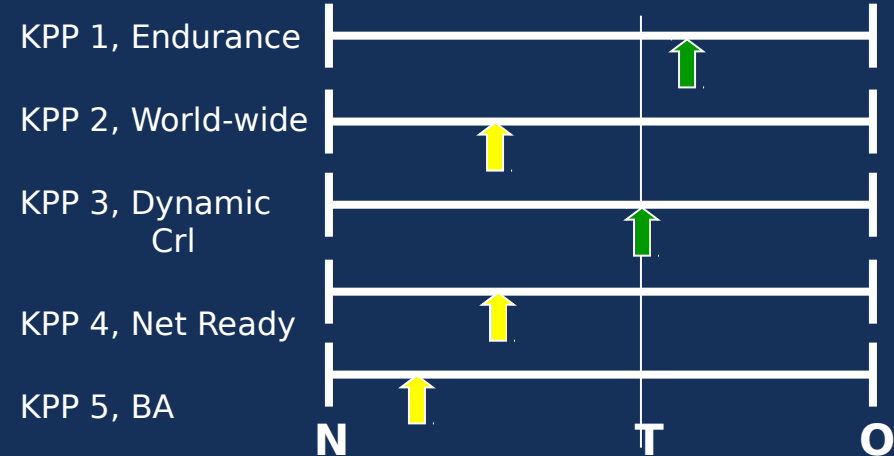
Tech Readiness Assessment

Critical Technologies	To Date	Estimate @ IOT&E
Endurance	TRL 6	TRL 8
World-wide operations	TRL 6	TRL 6
Dynamic Control	TRL 6	TRL 8
Net Ready	TRL 5	TRL 6
Battlespace Awareness EO	TRL 6	TRL 8
Battlespace Awareness IR	TRL 6	TRL 8
Battlespace Awareness Radar	TRL 6	TRL 8
Battlespace Awareness SIGINT	TRL 4	TRL 8
Battlespace Awareness MTI	TRL 6	TRL 8

Acquisition Program Baseline (APB)

Dec baseline

Cost
- PAUC   +10%   +15%   45%
   Baseline

- APUC   57%
   Baseline

Schedule   +6 mos   +9 mos
- IOC
   No established IOC in CDD

- IOT&E   24 mos
   Baseline

35

Defense Acquisition University

CONUS Basing:

	C	S	P
Beale	1		
Grand Fork	2		

C S P

OCONUS Basing:

CENTCOM	2		
EUCOM	2		
PACOM	2		

Exploitation:

DCGS 10.2	1		
DCGS WAN	1		
DCGS-AF	1		
DCGS-A (TE..)	3		
TEG	3		
JSIPS-N	3		
CROFA	1		
RSOC	1		
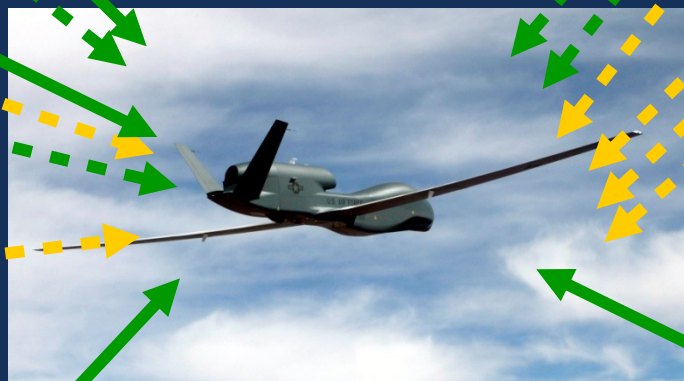
Battlespace Awareness:

	2		
ASIP	2		
RTIP	2		
E-10			

C2:

JTRS Cluster	2		
JTRS Wavef. r	1		
FAB-T	1		
CDL	1		
DISN	3		
ETP	1		
GIG	3		
NIPRNet	3		
SIPRNet	3		
JWICS	3		
INMARSAT	3		
UHF SATCOM	1		
GPS	1		

—— lid denotes current system

···· sh denotes future system

→ row to denotes support to

← row from denotes supports

—— known platform or system issues

—— onitoring potential interoperability issues

PM DAES Rating: I   C S P   Not Rated   Fielde 1
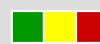
I = Integration.
Color denotes Synchronization of effort with this program
Number denotes degree of dependency:

36

Organization & Oversight

Flag-Level oversight thru [describe] *GS/CD*

Members
- *XXXX*
- *XXXX*
- *XXXX*

"Boundaries"
JROC-Approved [Topic Name]

Oversight – [Name]
Execute – [Name]

Key Performance Parameters
- **KPP** #1 [Describe] = Initial
- **KPP**# 2 [Describe] = Initial
- Etc.. [List the KPPs that specifically apply to this capability]

Hardware Refresh and System Enhancements & Integration
- **Per year = XXX**
- **Rationale**

Application and System Software Development
- **Per year = XXX**
- **Rationale**

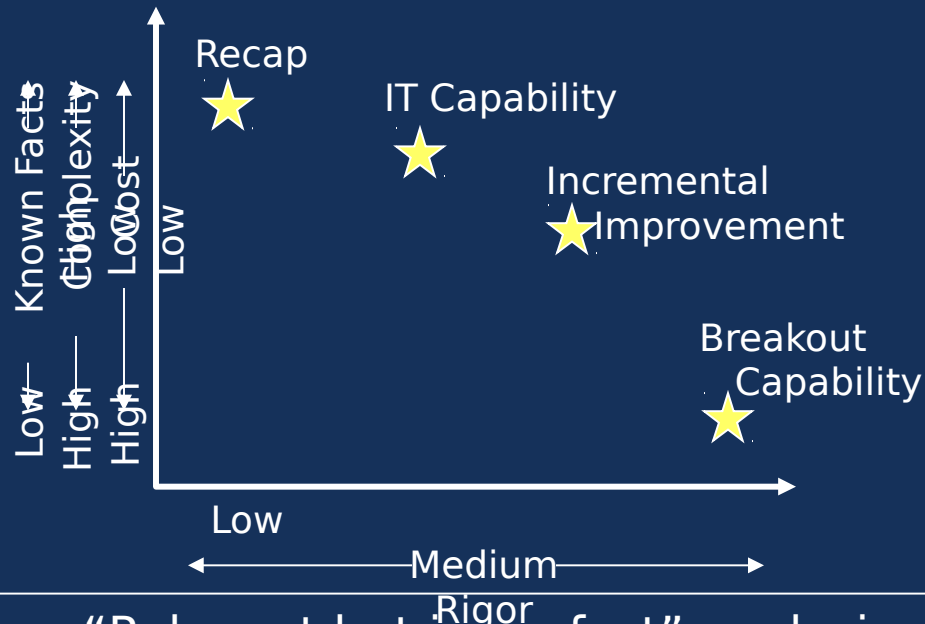## What does the CBA identify?

✴ **The mission**
- • **Concept of Operations**
- • **Assumptions**
- • **Timeframe**

✴ **Capability definition**
- • **Use SWarF identified attributes**

✴ **Gaps**
- • **Operational risk**
- • **Priorities**

✴ **Desired solution type**
- • **Breakout – 5x improvement over current, fundamental change**
- • **Incremental – modify an existing system**
- • **IT system**
- • **Non-materiel**

✴ **Recommendations**
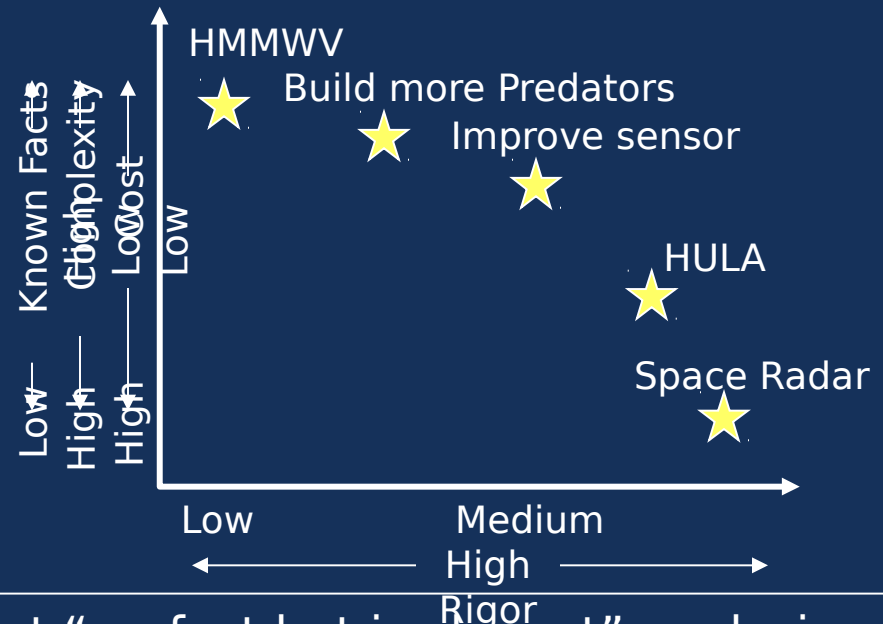- • **Sets the conditions for the ICD and AoA**

ICD

Objectives:
- Complete CBA within 30 Days.
- Produce enduring relevant capabilities

JROC
Gap Analysis/CBA

MDA
Solution Analysis/AoA

JROC Gap Analysis/CBA chart:

Axis labels: Known Facts (Complexity / Cost) — Low, High, High; Low

- ★ Recap
- ★ IT Capability
- ★ Incremental Improvement
- ★ Breakout Capability

Horizontal axis: Low — Medium — Rigor

MDA Solution Analysis/AoA chart:

Axis labels: Known Facts (Complexity / Cost) — Low, High, High; Low

- ★ HMMWV
- ★ Build more Predators
- ★ Improve sensor
- ★ HULA
- ★ Space Radar

Horizontal axis: Low — Medium — High — Rigor

"Relevant but imperfect" analysis not "perfect but irrelevant" analysis

Component responsible for determining depth of analysis and defending results

Tab 2

39

MDA = Milestone Decision Authority

What is a JCIDS responsibility…

* **Ensures the joint force has the capabilities to perform across the range of operations**

* **Is a primary interface to the DoD acquisition system**

* **Implements an integrated process to guide new capabilities development**

* **A key linkage on how the future joint force will fight**

* **Provides the analytic baselines to support studies to inform capability development**

What is NOT a JCIDS responsibility…

* **Is not capabilities-based planning**

* **Is not DoD 5000**

* **The JROC is not JCIDS**

* **Joint Concepts are not JCIDS**

* **The Analytic Agenda is not JCIDS**

* **Is not designed to obtain or address near-term funding or urgent warfighting needs (JRAC) but some changes are**

40

- ✳ **Deviations from the process are approved by DDRA**
- ✳ **Waivers have been used for:**
  - • **Request to develop a CDD without an ICD (ACAT II and below)**
  - • **Request to use an ORD for an upcoming MS C rather than submitting a new CPD**
- ✳ **Approval process**
  - • **Requests are submitted by Services/Agencies**
  - • **CAD/AO coordinates through**
    - − **Lead FCB**
    - − **JCIDS Branch**
    - − **CAD Div Chief**